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EXAMINER	
DUONG, THOI V	
ART UNIT	PAPER NUMBER
2871	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,586	GOTHARD, DAVID L.	
	Examiner	Art Unit	
	THOI V. DUONG	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *47,49-51,53-67 and 75-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *47,49-51,53-67 and 75-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the Amendment filed November 12, 2010.

Accordingly, claims 47, 49-51, 53-55, 57 and 80 were amended, claims 1-46, 48, 52 and 68-74 were cancelled, and new claims 82-92 were added. Currently, claims 47, 49-51, 53-67 and 75-92 are pending in this application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 83 and 88 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The written disclosure does not describe that the second panel comprises an array of Fresnel lenses; Fig. 1 only shows a plurality of Fresnel lens.

Claim Objections

4. Claim 85 is objected to because of the following informalities: claim 85 recites the limitation "the LED panel" in line 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

5. Claim 86 is objected to because of the following informalities: claim 86 recites the limitation "the cover panel" in line 2. There is insufficient antecedent basis for this limitation in the claim. In addition, in line 2, it should be 0.0625 inch (or 1/16") instead of 0.625 inch (see specification, page 3, lines 23-25). Appropriate correction is required.

6. Claim 90 is objected to because of the following informalities: claim 90 recites the limitation "the LED panel" in line 1. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

7. Claim 91 is objected to because of the following informalities: claim 91 recites the limitation "the cover panel" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 47, 49, 50, 55, 56, 58-63, 75-78, 80-83, 87, 88 and 92 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Johnson, US 6,439,731 B1) in view of Garwin et al. (Garwin, US 5,949,402).

Re claims 58 and 75, as shown in Fig. 2, Johnson discloses an LCD or organic display having uniform high intensity backlighting, wherein said backlighting is provided by an illumination apparatus comprising:

a first panel 10 comprising a grid of high intensity light point sources 12 (LEDs) and

a diffuser panel 20, the light passing directly from the point sources 12 to the diffuser panel 20; and

a display panel 18,

wherein the panels, each defining a plane, overlay one another in the sequence stated with their planes parallel to one another.

Johnson discloses that the diffuser panel 20 converts light from the light point sources 12 into more uniform glow across the surface of the LCD panel 18 so as to obtain a more uniform illumination of the LCD panel 18 over a relatively wide range of viewing angles (col. 6, line 65 through col. 7, line 6). Accordingly, it is obvious that the diffuser panel is capable of softening and giving a uniform appearance to the light emitted by said first panel, and the first panel 10 and the diffuser panel 20 provides a uniform high intensity backlighting to the display panel 18.

However, Johnson does not disclose a second panel comprising Fresnel lenses, wherein the first panel, the second panel and the diffuser panel, each defining a plane, overlay one another in the sequence stated with their planes parallel to one another.

As shown in Fig. 4, Garwin discloses an optical pointing device comprising a first panel 23 (PCB) comprising LED light source 21, a second panel comprising Fresnel lens 20, and a diffuser panel 26, the light passing directly from the point light source 21 to the Fresnel lens 20, and, subsequently, to the diffuser panel 26, wherein the panels, each defining a plane, overlay one another in the sequence stated with their planes parallel to one another (col. 3, lines 1-6; col. 4, lines 2-4; and col. 7, line 66 through col. 8, line 6).

(See also Fig. 12 where the optical pointing device comprises LEDs 54, Fresnel lens 56, 58 and diffuser panel 57 (col. 7, lines 43-51). Garwin also suggests that lenses

other than the biconvex lens shown in Fig. 4, such as Fresnel lens, may be used (col. 8, lines 1-3, 28-29, 32-33, 60-61).)

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the illumination apparatus of Johnson with the teaching of Garwin by having a second panel comprising Fresnel lenses corresponding to the plurality of LEDs of the first panel, wherein the first panel, the second panel and the diffuser panel, each defining a plane, overlay one another in the sequence stated with their planes parallel to one another in order to improve the optical alignment and optical beam profiles of the LEDs, thereby improving the accuracy of the apparatus and obtaining satisfactory performance without costly LED selection (col. 1, lines 5-12 and 54-59 and col. 2, lines 53-59).

With the modification, it is also obvious that the structure comprising the first panel, the second panel and the diffuser panel, which is substantially identical to the claimed invention, provides a uniform high intensity backlighting to the display panel (see MPEP 2112.01).

Re claims 47 and 60, the LEDs 12 are aligned in a plurality of columns and rows as shown in Fig. 2 of Johnson (col. 5, lines 10-19).

Re claims 49 and 62, Johnson discloses that the first panel 10 comprises a grid of LEDs 12 and a reflective background (col. 4, line 58 through col. 5, line 19).

Re claims 50 and 63, Johnson discloses that the first panel 10 has a white background (col. 4, lines 60-67).

Re claims 59 and 76, Johnson discloses that the high intensity light point sources 12 are LEDs (col. 5, lines 1-9).

Re claims 61 and 77, Johnson discloses that the first panel 10 comprises a grid of high intensity light sources 12 and a reflective background (col. 4, line 58 through col. 5, line 19).

Re claim 78, Johnson discloses that the first panel 10 comprises a grid of high intensity light sources 12 and a white background (col. 4, line 58 through col. 5, line 19).

Re claims 55, 56, 80, 81 and 92, Johnson discloses that the display panel 18 is an LCD display panel, which is a flat panel display (col. 3, lines 14-20). According to an intended use, it is well known in the art that the LCD display panel can be employed in variety of applications such as television (or a display screen as part of a television), or other than television or not a part of a television such as computers, video games, cell phones, etc...

Re claims 82 and 87, as shown in Fig. 4, Garwin discloses that the (Fresnel) lens 20 corresponds with four LEDs (col. 3, lines 1-4). Meanwhile, as shown in Fig. 2 of Johnson, the first panel 10 comprises a plurality of LEDs 12 aligned in a plurality of columns and rows. Accordingly, with the modification, it is obvious that the second panel comprises a plurality of Fresnel lenses corresponding to the plurality of LEDs.

Re claims 83 and 88, as shown in Fig. 2 of Johnson, the first panel 10 comprises an array of LEDs 12. Accordingly, with the modification, it is obvious that the second panel comprises an array of Fresnel lenses corresponding to the array of LEDs.

10. Claims 51, 53, 54, 64-67 and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Johnson, US 6,439,731 B1) in view of Garwin et al. (Garwin, US 5,949,402) as applied to claims 47, 49, 50, 55, 56, 58-63, 75-78, 80-83, 87, 88 and 92, and further in view of Shimada et al. (Shimada, US 6,020,867).

Re claims 51, 54, 64, 65 and 79, Johnson as modified in view of Garwin does not disclose that the diffuser panel is made of polycarbonate or glass.

As shown in Figs. 89 and 90, Shimada discloses that the diffuser panel 239 disposed in front of the backlight unit 530 may be formed of a transparent member such as polycarbonate or glass in order to provide a large area planar distribution showing a high luminance and a good viewing angle characteristic (col. 37, line 52 through col. 38, line 5; and col. 38, lines 29-32).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the illumination apparatus for displays of Johnson by employing a diffuser formed of polycarbonate or glass as taught by Shimada in order to realize a high luminance and a good viewing angle characteristic for the display (col. 38, lines 29-32).

Re claims 53, 66 and 67, as shown in Fig. 148, Shimada discloses a LCD apparatus comprising a backlight unit 530, a diffuser panel 239 (diffusion plate), an LCD panel P, and a cover 242 (face plate) placed in front of the LCD panel P to protect the LCD panel P, wherein the cover 242 is made of a reinforced glass (col. 11, lines 4-11 ; col. 19, lines 13-17; and col. 61, line 59 through col. 62, line 20).

11. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Johnson, US 6,439,731 B1) in view of Garwin et al. (Garwin, US 5,949,402) as applied to claims 47, 49, 50, 55, 56, 58-63, 75-78, 80-83, 87, 88 and 92, and further in view of Abileah et al. (Abileah, US 7,280,102 B2).

Johnson as modified in view of Garwin discloses that the illumination apparatus is applicable to a flat panel display (col. 3, lines 14-20). However, Johnson does not specifically suggest that the display panel is an organic display panel.

As shown in Fig. 1, Abileah discloses a display device comprising an illumination apparatus 52 with LEDs, a diffuser 56 and a display panel 54, wherein the display panel can be liquid crystal display, plasma display, organic display, EL display, etc... (col. 3, lines 18-27 and col. 4, lines 30-43).

Thus, according to an intended application, it would have been obvious to one having ordinary skill in the art that the display panel can be an organic display panel to suit the intended application.

12. Claims 84-86 and 89-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (Johnson, US 6,439,731 B1) in view of Garwin et al. (Garwin, US 5,949,402) as applied to claims 47, 49, 50, 55, 56, 58-63, 75-78, 80-83, 87, 88 and 92 above, and further in view of Shimada et al. (Shimada, US 6,020,867), Mandler et al. (Mandler, US 7,084,935 B2), Wilson et al. (Wilson, US 5,940,152), Suga et al. (Suga, US 6,445,504 B1) and Dushane et al. (Dushane, US 6,032,867).

Re claims 84 and 89, Johnson as modified in view of Garwin does not disclose total thickness of the apparatus being less than 1.5 inch thick (or 38.46 mm).

At first, Shimada discloses that the thickness of a display panel is as thin as possible and generally 0.5 to 20 micrometer (or .0005 mm to .020 mm) in order to effectively realize high response speed and bistability (col. 91, lines 21-24).

Further, Mandler discloses an LED panel having a thickness of approximately 0.5 mm (col. 4, lines 17-21 and 55-60) for obtaining uniform display images in the optical performance (col. 1, lines 39-61).

Furthermore, Wilson discloses that a Fresnel lens having a thickness of about 2 mm, which is known as a thin, light, inexpensive optical element, is used to reduce substantially size, weight and cost, and does not have the tendency to introduce undesirable field curvature (col. 1, lines 55-64).

Furthermore, Suga discloses a diffuser panel having a thickness of about 10 to 200 micrometer (or .010 mm to .200 mm) for realizing high luminance and high visibility (col. 1, lines 5-10 and col. 3, lines 57-58).

At last, as shown in Figs. 1C and 1D, Dushane discloses a display comprising a cover panel having a thickness of 0.08 inch (or 2.05 mm) for an opening 124' to accommodate the LCD 124 (col. 6, lines 5-10).

Accordingly, if the apparatus comprising a first panel as an LED panel having a thickness of 0.5 mm, a second panel as a Fresnel lens panel having a thickness of 2 mm, a diffuser panel having a thickness of 0.2 mm, a display panel having a thickness of 0.02 mm, and a cover panel having a thickness of 2.05 mm, total thickness of the

apparatus is: 0.5 mm + 2 mm + 0.2 mm + 0.02 mm + 2.05 mm = 4.77 mm, which is much less than the claimed range of less than 1.5 inches or 38.46 mm.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ those panels with proper thicknesses in order to realize a thin display with all above advantages.

Re claims 85, 86, 90 and 91, the cited references do not disclose the thickness of the LED panel and the display panel being each 0.5 inch thick (or 12.82 mm) and the thickness of the diffuser panel, the cover panel and the Fresnel lens panel being each 0.0625 inch thick (or 1.602 mm). However, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device (See MPEP 2144.04). Moreover, it would have been obvious to one having ordinary skill in the art at the time the invention to employ those panels having proper thicknesses to suit an intended application.

Response to Arguments

13. Applicant's arguments filed November 12, 2010 have been fully considered but they are not persuasive.

Applicant argued that Garwin uses a conventional lens 20 (shown in Fig. 4), not a Fresnel lens, to form a higher intensity, focus beam of light and Garmin admits that Fresnel lenses capture the light of the LEDs which are known to have poor optical precision and hence variable angular emission profiles (col. 1, lines 49-53). The

Examiner disagrees with Applicant' remarks because of Applicant's clear misinterpretation of Fig. 4 as well as the invention of Garwin. In fact, Garwin discloses that lenses other than biconvex lens 20, such as Fresnel lens, may be used in Fig. 4 (col. 4, lines 1-4 and col. 8, lines 1-3, 28-29, 32-33, 60-61). Garwin also discloses that an advantage of the pointing device of Garwin's invention is that LEDs of conventional manufacture, known to have poor optical precision and hence variable angular emission profiles, may nevertheless be used in the pointing device of the invention (col. 1, lines 49-59). Thus, Fresnel lens is to be used in Garwin's invention along with the LEDs (even with the conventional LEDs) for improving the optical alignment and optical beam profiles of LEDs (col. 1, lines 5-12).

Applicant also mentioned about an undesirable side-effect caused by adding a second lens shown in Fig. 12 of Garwin (col. 7, lines 43-55). However, in spite of Garwin's cautions, the claimed invention contains a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all structural limitations of the claim.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir.

1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, as shown in Fig. 2, Johnson only discloses a first panel comprising LEDs, a diffuser panel 20 and an LCD panel 16. As shown in Fig. 4, Garmin alone also discloses a first panel comprising LEDs, a second panel comprising Fresnel lens and a diffuser panel 26 in that order. Garmin is employed for teaching using a Fresnel lens between the first panel comprising LEDs and the diffuser panel for improving the optical alignment and optical beam profiles of the LEDs (col. 1, lines 5-12). This feature is not found in Johnson. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the illumination apparatus of Johnson with the teaching of Garwin by having a second panel comprising Fresnel lenses between the first panel comprising LEDs and the diffuser panel in order to improve the optical alignment and optical beam profiles of the LEDs.

Thus, there is a motivation to add Fresnel lenses to Johnson's apparatus to produce the claimed invention. Johnson as modified in view of Garwin discloses an illumination apparatus which is substantially identical to the claimed invention. When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent (MPEP 2112.01). Therefore, it is obvious that the structure comprising the first panel comprising LEDs, the second panel comprising Fresnel lens and the diffuser panel, which is substantially identical to the claimed invention, also provides a uniform high intensity backlighting to the display

panel. Thus, where the claimed and prior art products are identical in structure, a prima facie case of obviousness has been established.

Furthermore, Applicant argued that one would only create more intense "hot spots" by employing a Fresnel lens in combination with a panel of unshielded LEDs with respect to Garwin and Pelka. The Examiner disagrees with Applicant's statement since nowhere in Garmin shows "hot spots" or "a panel of unshielded LEDs". It is noted that Pelka was not employed in the previous office action dated 9/22/2010.

In conclusion, if Applicant asserts that Garwin is inoperative because of an undesirable side effect with the presence of Fresnel lens, the claims represented by Applicant must distinguish from the alleged inoperative reference disclosure. Since the prior art apparatus teaches all the structural limitations of the claims, the application is still not in condition for allowance.

It is also noted that a new ground of rejection is applied to new added claims 84-86 and 89-91 since those claims contain new subject matter.

Conclusion

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

/Thoi V. Duong/ - Primary Examiner

January 6, 2011